

## **Draft Teton Subbasin Assessment and Total Maximum Daily Load (TMDL): Responses to Public Comments**

The draft version of the *Teton Subbasin Assessment and Total Maximum Daily Load (TMDL)* was available for public comment from March 5, 2001 through May 7, 2001. The draft was mailed to members of the Henry's Fork Watershed Council Water Quality Subcommittee and other interested parties. Copies were made available for review at the following locations: Valley of the Tetons Library in Victor, Victor City Hall, Teton County Courthouse in Driggs, USDA Service Center in Driggs, Madison Library District in Rexburg, Idaho Falls Public Library, and the DEQ Regional Office in Idaho Falls. A public meeting to discuss the content of the *Teton Subbasin Assessment and Total Maximum Daily Load (TMDL)* occurred on March 15, 2001 at DEQ's Idaho Falls Regional Office. A presentation regarding the TMDL was made on April 17, 2001 at the Henry's Fork Watershed Council meeting in Driggs, and an open house to discuss the TMDL was held the same day at the USDA Service Center in Driggs. Notices advertising the availability of the draft, major conclusions, and request for comments were published in the Idaho Falls Post Register, Teton Valley News, and Rexburg Standard Journal newspapers for the duration of the comment period. DEQ responses appear after the comment, in italics.

Comments were received from:

Henry's Fork Watershed Council  
Idaho Department of Lands, Eastern Idaho Area Office  
United States Department of Agriculture, Caribou-Targhee National Forest, Teton Basin  
Ranger District  
United States Department of the Interior, Bureau of Reclamation, Snake River Area  
Office  
United States Environmental Protection Agency, Region 10, Idaho Operations Office

Because the Henry's Fork Watershed Council is the designated Watershed Advisory Group for TMDL development in the Henry's Fork Basin, a copy of the Council's comment letter is included at the end of this Appendix.

### **Comments received from Idaho Department of Lands:**

Page 159, second paragraph: The last sentence states, "Public lands are used for grazing.....". Public lands refers to federal land only. If your intent is to include Endowment Lands in this statement, it should be identified separately. i.e. Public and Endowment lands.....

*The phrases, "State Endowment Lands," or "State Lands," have been inserted in reference to lands managed by the Department of Lands.*

Page 164, Resource Problems Identified, first paragraph: The last sentence states "The segment of Moody Creek identified as impaired was below the Forest boundary,

implicating the Idaho Endowment Lands as the source of pollutant.” It seems that more explanation is needed here (i.e., the boundary should be modified because the Forest is a source of significant sediment).

*This sentence referred to the upper boundary of the 303(d)-listed segment of Moody Creek, as originally identified in the 1992 Idaho Water Quality Status Report (DEQ 1992). It should have been written as follows: “The segment of Moody Creek identified as impaired was below the Forest boundary, implicating State Endowment Lands and private lands as sources of pollutants.” Data and public comments submitted to DEQ by the Forest Service since the draft document was prepared have shown that the Forest is a source of pollutants. This issue has been addressed in the final document in a section added to the discussion of Moody Creek.*

Page 169, Discussion: You state in the discussion that TMDLs for both nutrient and sediment are appropriate. Is it more accurate that TMDLs for nutrient and sediment are appropriate for the lower portion of Moody Creek, and just sediment on the upper portion? I really don't know, just posing a question.

*Data collected in 2001 by the Idaho Association of Soil Conservation Districts on behalf of the Madison Soil and Water Conservation District indicate that total phosphorus concentrations exceed the water quality target of 0.1 mg/L cited in Table 19 of the assessment. At this time, the source of total phosphorus is unknown. Additional sampling must be conducted to determine whether concentrations are elevated because of land use activities or because of geology. This issue has been addressed in the final document in a section added to the discussion of Moody Creek*

#### **Comments received from Caribou-Targhee National Forest, Teton Basin Ranger District:**

Summary: Overall, the subbasin assessment was very well done. However, it could be improved by tying together the climate and geology sections to show how their interaction affects the stream flow and sediment regimes. This would set up the discussions on the function and condition of individual watersheds. The assessment could also use more of the Pine Creek Pass SNOTEL data to evaluate mid-elevation conditions.

*The section, Hydrography and Hydrology, and sections describing specific stream reaches contain more detailed explanations of the affects of climate and geology on hydrologic regime. The discussion of Pine Creek Pass SNOTEL data has been expanded, and some of the following specific comments regarding types of streamflow have been directly incorporated into the document.*

Summary: The forest is concerned that the sediment targets used to evaluate existing conditions may not be appropriate in many of these streams. For example, in gravel bed streams keying in on the 6.35 mm particles could cause an analyst to identify problems that don't really exist. That is; there may not be a problem, that's just what the streams

are. To properly evaluate conditions, stream types should be given down to the dominant substrate size (for example; the number in the Rosgen system). That way we could tell if the stream is supposed to be a gravel bed stream. Without this information, we could not determine the true conditions of these streams. Where existing conditions are close to the target, as with Darby and Packsaddle creeks, this can be critical. If these are natural gravel bed streams, DEQ should concentrate on the fine sediments (clay, silt, and sand) and not the fine gravels (between 2 and 6.35 mm). In the case of Darby and Packsaddle, the streams exceeded the smaller size target by 2 and 3% respectively. This is likely an insignificant exceedence, especially since the targets were extrapolated from another basin and geology (page 78 says its from granitics). In fact, 2 and 3% would likely fall within the statistical error bands for this target. In boulder and cobble bed streams, 6.35 mm may be appropriate, as fine gravels could embed these larger particles.

The last sentence on page 89 says, “The correlations between surface fines...was slightly stronger when using fines less than 1 mm ...most detrimental to the invertebrate community,” again this suggest that 1 mm and not 6.35 mm may be the appropriate size for the Teton Basin.

A gravel bed stream (Rosgen B4) would naturally have a higher percentage of fine gravels (2-6.25 mm) than a boulder streams (Rosgen B2). Therefore, the same sediment target should not apply to both stream types. Until better information become available, we recommend using <1 or 2 mm (sand and finer) for gravel bed streams and <6.35 mm for cobble/boulder streams.

*Note: This comment and response also address the specific comments submitted for pages 82-83, 176, and 222.*

*The targets for subsurface sediment referred to in these comments (see Pollutant Targets and Table 19) were selected because they are consistent with available scientific data. The sediment sizes recommended by the Forest Service for gravel and cobble/boulder streams may be incorporated into the TMDL implementation plan.*

Summary: Throughout the document it states that many reach boundaries must be reconfigured on the basis of perennial flow for the purposes of assessing beneficial uses. How is this consistent with IDAPA 16.01.02.070.07 (Application of Standards to Intermittent and Ephemeral Waters)? I'd assume that since these segments flow more than 5 cfs during optimal flows and that they still provide seasonal connectivity, they would still need to support cold-water biota. Is this correct?

*Note: This comment and response also address the specific comments submitted for pages 138, 139-140, 147, 158, 176, 183, 194, and 221.*

*Numeric criteria for cold water aquatic life (e.g., temperature and dissolved oxygen) apply to intermittent channels when discharge is greater than 1 cfs (WQS § 003.51, § 070.07). So intermittent streams that flow only during periods of runoff, and provide migration corridors for aquatic life, are protected by numeric criteria. Narrative*

*criteria, such as the criteria for sediment and nutrients, state that a pollutant shall not exceed quantities which impair beneficial uses. Idaho DEQ uses biological indices to assess support of the beneficial uses of cold water aquatic life and salmonid spawning. According to DEQ's Standards Coordinator, these biological indices were developed based on the composition of aquatic insect or fish communities sampled in perennial reference streams. Similar species diversity and other community measures cannot be expected to occur in channels that are periodically dry. Therefore, the biological indices used to assess beneficial use status can only be used on perennial portions of streams. This interpretation has precedence in Idaho's 1998 303(d) List, response to Public Comments 20 and 75 for Tygee Creek and 80 for Tag Alder Creek.*

Summary: We're concerned that data wasn't collected in several areas. If a riffle isn't found or a reach is inundated by a Beaver pond, the sampling protocol should allow the surveyors to "bump up stream" to the first measurable unit. Getting all the way to a site and not sampling is an inefficient use of time and money.

*Note: This comment and response also address the specific comments submitted for pages 140 and 162. Comment noted.*

Summary: Were any streams/reaches found that could be used as reference reaches for this subbasin? These areas could then be used for comparisons against more disturbed areas to determine natural versus anthropogenic effects. This would address concerns regarding using targets derived from other areas.

*Reference reaches have not been identified, but the results of BURP data could be used to determine which reaches may qualify. The Henry's Fork Water Quality Subcommittee endorsed the possibility of using reference reaches to assess the success of TMDL implementation.*

Page 7 The second paragraph states that TMDLs for water bodies listed as a result of this analysis would be delayed until at least 2006. The forest would like to see these TMDLs established now. Since this process is based upon adaptive management, DEQ doesn't need to have data prior to establishing the TMDL. Many of the other streams in this area also lack data, yet objectives and TMDLs were still established for them. By doing the same for the newly identified streams, the likelihood of further water quality degradation would be decreased now. This is preferable to having impacts continue for at least five more years. Therefore, we feel that deferring the development of the TMDL is unnecessary and counterproductive to improving water quality. Preparing them now is also consistent with the Clean Water Act, which allows the development of preventive TMDLs. This would cover these segments until they are formally listed.

*Note: This comment and response also address the specific comments submitted for pages 16 and 220.*

*The final document includes a sediment TMDL for the North Fork Teton. TMDLs for the remaining 1998 303(d) listed reaches will be drafted and submitted prior to January 2003.*

Page 9 Alta Wyoming also has a NWS cooperative site (#480140). However, the data for Driggs is likely very similar.

*Comment noted.*

Pages 9-11. At first glance the discussion on growing season doesn't appear to be relevant to water quality. If this element is to be included, the document should point out that the length of the growing season influences land use and therefore is tied to some of the problems found in the basin. If this connection isn't made, the discussion doesn't add much to the subbasin assessment and isn't necessary to support the TMDL.

*Sentences regarding the significance of growing season and water use in the subbasin have been added to the final document.*

Page 10. Temperature is also available for the Pine Creek Pass SNOTEL site. This would provide temperatures for a mid-elevation site and therefore would be valuable in providing perspective when evaluating temperature TMDLs.

*Data from the Pine Creek SNOTEL site has been incorporated into the final document.*

Page 12. The last sentence in paragraph three is confusing – "...and snowmelt high runoff in the Teton River near St. Anthony occurs in June."

*This was the statement of the author cited.*

Page 12. Paragraph three: Also refer to table 5 in the discussion on rapidly decreasing snow depth (Pine Creek Pass).

*Reference added.*

Pages 12-13. There is also data on temperature and precipitation at the Pine Creek Pass site. This data can be compared and contrasted with the lower elevation NWS sites to determine overall patterns and the affect of elevation on temperature, precipitation, and snow. Adding this information to tables 1 and 4 (pages 10 and 13) would also be useful.

*Inclusion of this information would make the discussion of climate more complete, but the major revisions would not improve the readers' understanding of the climate of the subbasin.*

Page 14. This paragraph states that based on the given stations, the water content is highest in the central portion of the subbasin and lowest in the southeast portion. However, this may be due to very localized site characteristics. For example, within 100

feet of the State line station water content may actually exceed the values found at Packsaddle. The conclusions reported may be valid, but care must be taken to ensure that the differences aren't due to very specific local conditions rather than the stations overall geographic position within the basin.

*Comment noted.*

Page 14. Since paragraph three on page 12 brings the climatic elements together, it would be a good final paragraph for this section. I would emphasize that the annual hydrograph begins to rise in late April and May as the lower elevations contribute melt (resulting from temperatures and spring rains). Then as the higher elevations begin contributing melt (you can reference the temperature, precipitation, and snow depth data from Pine Creek), the flows remain high until mid June before the hydrograph begins to fall. This runoff pattern would influence things such as temperature, return to base flows, sediment routing, temperatures etc. This also points out the value of expanding the use of the Pine Creek Pass data.

*The paragraph on page 12 has been moved to the end of the section.*

Page 23. Bitch Creek appears to be fairly flashy (unit discharge of 23.2). Flashy streams can be more sensitive to bank disturbances depending upon stream type. This could affect sediment production.

*Comment noted.*

Page 23. Is the unit discharge for Teton River (below Teton Dam) a function of the reservoir? If so, it should be noted. It would be misleading to compare a regulated stream with a natural stream.

*Closure of the reservoir for storage occurred on October 3, 1975 and the dam failed on June 5, 1976, so the maximum unit discharge probably includes 0 discharge measurements for this period. The reader is referred to the original reference for more information.*

Page 24. The paragraph starting "England (1998)..." says the largest observed peak discharges are caused by winter storms. However, flow volumes for these rainfall-dominated floods (I'd assume rain-on-snow) are substantially less than their snow-melt counterparts. How are the largest peaks less than another peak? Based on my experiences working in rain-on-snow zones, these types of events are the largest events in terms of the size (height) of peak but they are also shorter lasting. Therefore, total water is less than during spring snowmelt. In other words, the flow at the instant of the peak discharge is greater for the flashy rain-on-snow event but total water volume is greater for the snowmelt hydrograph. If this is the case, the sentence should read "2) the largest instantaneous discharges are caused by winter rain-on-snow events, although total runoff volumes are substantially greater during spring snow melt." I'd also assume that the February 1962 flood was a rain on snow event although the text doesn't identify it as such.

*This is the language used by the author of the report.*

Pages 24-25 High peak unit discharges indicate that a large portion of the drainage is contributing to a given stream flow. We recommend stressing the type of runoff found in the different areas of the watershed.

The upper basin's peak flows appear to be snowmelt driven. This is shown by low unit discharges indicating that high elevations and steep elevation gradients prevent the entire basin from contributing melt at once. This is supported by the individual basins write-ups, which describes the streams drop in elevation from their headwaters to their mouths.

The lower basin's peak flows appear to be driven by spring rains (on saturated soils). This is illustrated by moderate unit discharges indicating that a large portion of the basin can contribute flow at once (elevation has less of an effect than in the upper basin). Snowmelt from headwaters also plays a role in this scenario.

Finally, Bitch Creek appears to be fairly flashy for this area. This could be the result of channelization or a small rain-on-snow influence (Philbin found that rain-on-snow systems generally have unit discharges between 35-55). It may be that this area normally behaves like a snowmelt system, but winter rains may cause significant snowmelt in the lower portion of the drainage.

These different runoff drivers are important in evaluating channel stability, sediment production and routing, and temperatures.

*These comments have been incorporated in the final document.*

Page 30. Paragraph two discusses the use of pipelines. Have these pipelines eliminated fish passage into tributary streams (that passed fish prior to pipeline construction)?

*Whether fish passage has been eliminated depends on the size and condition of the pipeline and flow regime. Most of these streams connect to the Teton River only during periods of runoff, so fish passage would not have occurred before pipelines were installed except during runoff. But apparently provisions for fish passage not made when the pipelines were constructed except in the case of the Trail Creek sprinkler system.*

Page 31. The last sentence of paragraph one says "The Teton Creek mitigation..." Should this say Teton River? Is there fish passage at this structure?

*No, the mitigation project is located on Teton Creek and is named for the creek even though it was intended to mitigate for damage caused to the river. Yes, a fish ladder was constructed at the Felt dam hydroelectric project to provide passage. Sentences have been added to the document in response to these questions.*

Paragraph three mentions that Webster dam is a fish barrier, what about the other dams?

*Linderman and Teton Dams are not intact and are not barriers. A sentence has been added to the document in response to this question.*

It sounds like we could use these dams (Felt, Webster etc...) to estimate sediment production. We should know the volume of the original impoundment and the time until it reached capacity. This would give us a rate of filling or sediment production.

*Comment noted.*

Page 37. The soils mineral size is also important in sediment transport. Clay and silt loams likely produce suspended sediment that could influence turbidity; while gravel and cobble loams would produce bedload-sized particles. This is important in determining sampling methods to fully address sediment levels.

*Comment noted.*

Page 41. The T value does not consider effects to water quality. It is therefore a poor indicator for use in evaluating water quality impacts. Tolerable soil loss does not equal tolerable sediment delivery. This is very important.

*The T value is explicitly defined; there was no implication made that T is equivalent to sediment delivery to waterbodies.*

Page 44. Table 10: Change Ownership to management. The USFS and other government agencies do not own any lands; these are public lands.

*Correction made.*

Pages 45-46. The objective identified from the Revised Forest Plan for the Targhee National Forest refers only to those reaches located on National Forest System lands. These objectives do not apply to privately managed reaches.

*The sentence has been modified to incorporate this comment.*

Page 46. Paragraph two under fisheries: A ruling has recently been made on the Yellowstone cutthroats. Check with IDF&G on this.

*This section has been changed to include the decision by the U.S. Fish and Wildlife Service. to not list Yellowstone cutthroat trout.*

Page 49. In table 12 what does “-“ mean? Does it mean not evaluated or that none were found?

*None found. The table has been modified in response to this comment.*

Page 51. Paragraph one: The sentence “The vast majority of federally owned...” should be changed to federally managed. The federal government doesn’t own land, the public does.

*These lands are federally owned, and they are managed in trust by federal agencies for the benefit of the American public. Land plats show the United States as the owner of the lands referred to in this sentence.*

Page 51. Paragraph two: Madison county includes land outside of the Teton Basin. Does the 470-farm figure for Madison county include farms located outside of the Teton Basin? Both the number of farms and acreage should be limited to the Teton Basin.

*Only a small proportion of Madison County is outside the Teton subbasin boundary. The purpose of this discussion is to inform the reader of the relative importance of various agricultural activities in the upper subbasin (Teton County) and the lower subbasin (Madison County). To achieve this purpose, it is not necessary to adjust the figures based on the subbasin boundary.*

Page 56. Paragraph three (Population and Land Use): This section is misleading. Most of the growth in Teton County Wyoming is centered around Jackson (outside of the subbasin). However, these people likely recreate in the Teton Basin. We would expect the development of the Grand Targhee Ski Resort to increase the population in Wyoming’s portion of the Teton Basin.

*The purpose of this paragraph is to illustrate the rate of population growth in Teton County, Idaho relative to other counties in the Greater Yellowstone Ecosystem and in the United States. The word “partially” was added to indicate that not all of Teton County, WY is located in the Teton subbasin.*

Page 57. There is also a new wastewater treatment plant at the Grand Targhee Ski resort (installed in the late 1990’s). This plant is located on Dry Creek and it is designed to handle all reasonable foreseeable growth at the resort.

*Comment noted.*

Page 58. Paragraph three: Change federally owned and managed to publicly owned.

*The words “federally owned” have been deleted.*

This section should also make note of the Master Development Plan for the Grand Targhee Ski Resort. This plan will drive the development of the ski area.

*Information regarding the Teton subbasin was requested from the Forest Service but the Master Plan was not provided. Discussion of the Master Plan would have made the assessment more complete, but given time constraints for submission of the assessment and TMDL, revision of the document for this purpose is not warranted.*

Page 62. This section should acknowledge that Wyoming also has established beneficial uses and standards in this subbasin.

*Discussion of Wyoming's Water Quality Standards is beyond the scope and authority of the Idaho TMDL development process.*

Page 70. This is a repeat of figure 13 instead of 14.

*This has been corrected in the final document.*

Page 73. Table 19: Sediment – This variable would be stream type related. Some streams have naturally fine substrates. How would these streams be handled?

*The target for turbidity is applicable regardless of stream type because, except in the case of summer base flows, it is measured relative to background. The target for total suspended solids is applicable regardless of stream type because it pertains to the water column.*

Page 78. Indented paragraph: Is it true that 6-7% fine sediment (<0.25 mm) resulted in that much of a reduction? That seems like a very low percentage of fine sediment.

*This is a direct quotation from a published paper. The conclusions reported by the authors are assumed to be true.*

Page 89. Paragraph two: Why use 6 mm when page 78 says this size really doesn't fit non-granitics?

*Because this is the upper size of fine sediment according to the Wolman pebble count procedure used in DEQ's BURP protocol. Also, Mebane (2000) showed an inverse correlation between biological indicators and fines 6 mm in size using data collected throughout Idaho. The purpose of this analysis was to determine 1) whether the same relationship existed for the data collected in the Teton subbasin, and 2) whether the relationship existed whether particles were measured in wetted stream channels or bankfull channels.*

Using the wetted channel creates problems regarding sampling repeatability. Since the wetted width can change dramatically between sampling periods, observations over time may not represent true differences in fine sediment levels.

*Comment noted.*

The last sentence, "The correlations between surface fines...was slightly stronger when using fines less than 1 mm ...most detrimental to the invertebrate community", again (as with page 78) suggest that 6.35mm may not be the appropriate size for use in the Teton Basin.

*Correct. That is the stated conclusion.*

Pages 91-97 Adding stream types to the table would help with interpretations. A gravel bed stream (Rosgen B4) would naturally have a higher percentage of fine gravels (2-6.25 mm) than a boulder streams (Rosgen B2). Therefore, the same sediment target should not apply to both stream types.

*Rosgen Level I stream types are listed for all sites sampled in Appendix H. Addition of Rosgen Level II stream types will be considered for future assessments. For the purpose of TMDL implementation, Rosgen Level II stream types can be determined using Wolman pebble count data collected at BURP sites.*

Page 99. The Grand Targhee Ski resort also has a NPDES permit for its wastewater treatment plant on Dry Creek.

*The operator of the treatment plant has been contacted and information regarding this facility has been included in the final document.*

Page 100. The USFS also collected temperature data on Fox Creek and Moody Creek in 2000.

*May the Idaho Falls Regional Office of DEQ receive a copy of the data collected?*

Page 101. Sediment levels are also a function of timing. The largest pulse often occurs on the first rising limb of the annual hydrograph, with smaller sediment concentrations found at subsequent equal or even higher flows. This would explain some of what is reported in this section. The flashy nature of Bitch Creek (page 23) suggest that the reduced bank stability, expected with this type of system, may be producing high levels of sediment. Based upon this information, concentrating on bank stability on National Forest lands and a combination of agriculture and bank stability on agricultural lands seems appropriate.

*Comment noted.*

Page 105. I am missing figures 20-25.

*These were omitted from the draft but have been included in the final document.*

Page 106. Bullet 2: Is the difference between the Forest and the stream's mouth statistically significant when evaluating .05 mg/L?

*The first sentence of the paragraph states that concentrations at both sites were comparable. Results were reported as greater than 0.05 mg/L because this was the detection limit for total phosphorus. A statistical analysis of the data was not performed*

*because low concentrations did not warrant such an analysis and the data do lend themselves to statistical analysis.*

Page 115. I recommend only using Teton County Idaho. The portion of Teton County Wyoming that falls within this subbasin is not agricultural.

*This was an error. The figure for percent of residual nitrogen originating from fertilizers should have been 58%, not 26%. This discussion has been corrected.*

Page 124. Paragraph three: Should say land use was described rather than allocated. Are these percentages basin wide or just in Idaho?

*Correction made. The data were for the entire subwatershed.*

Are the erosion rates just on the 32% croplands?

*Yes. As stated, erosion rates are for cropland.*

Page 132. Teton Canyon Water Quality Planning Project: Erosion is not as important as delivery in evaluating water quality.

*The discussion refers only to tolerable soil loss, not water quality.*

Page 132. Water Quality Data – Bullet 1: Was the data collected during the rising limb of the spring runoff? This is generally the time of maximum concentrations.

*This information was not provided in the original report.*

Page 134. Paragraph starting “Drews...” Same comment as page 124 (footnote too).

*The percentages of cropland are explicitly stated.*

Page 135. Was the data collected in a warm or cool year? Was it a wet or dry year?

*While this information would provide a more complete understanding of the data, the answers would have to be determined from weather records. Because no exceedences occurred collection of the additional data is not warranted.*

Page 138. Darby Creek: Change “...east of the state line is federally owned”, to either publicly owned or federally managed.

*Changed to “federally managed.”*

Page 139. Darby Creek isn’t classified. Rather “the landtypes within the Darby Creek watershed are classified by the Forest Service as ...”

*The word “drainage” was inserted after Darby Creek for clarification.*

Page 145. Resource Problems Identified by the USDA and TSCD: What is the bank stability rating? 65% of 2,601 is a lot of sediment to be coming from the banks.

*Bank stability ratings were not provided in the original source. In Table 3 of the Teton River Basin Study, sediment yield from land use is listed as 907 tons/year and sediment yield from streambanks was listed as 1,694 tons/year, for a total yield of 2,601 tons/year.*

Pages 145-146. The top of page 146 refers to table 23 instead of 19.

*Correction made (actually it refers to Table 19 instead of 23).*

The levels of sediment are only 2 and 12% above targets. Are these exceedences statistically significant? We wouldn't call this evidence of excessive sediment deposition, especially since the targets were extrapolated from another basin and geology (page 78 says its from granitics). In addition, the last sentence on page 89 says, “The correlations between surface fines...was slightly stronger when using fines less than 1 mm ...most detrimental to the invertebrate community.” Therefore, we feel DEQ should concentrate on the smaller particles in the Teton Basin. Given that the targets were not locally developed, we feel that an exceedence of 2% would not be evidence of excessive deposition. In fact, 2% would likely be within the statistical error band.

*Statistical analysis of the data was not performed because the data do not lend themselves to analysis. The exceedence is stated to specify how the results compared to the targets. The implications of values that slightly exceed the targets are currently unknown.*

Page 148. Fox Creek isn't classified. Rather “the landtypes within the Fox Creek watershed are classified by the Forest Service as ”

*The word “drainage” was inserted after Fox Creek for clarification.*

Page 151. The Forest Service placed a thermograph at the State line in the summer of 2000 and found a maximum instantaneous temperature of 10.6 degrees Celsius. Since this was a warm and dry year, temperatures are likely always well within standards at this location.

*May the Idaho Falls Regional Office of DEQ receive a copy of the data collected?*

Page 153. Resource Problems Identified by the USDA and TSCD: What is the bank stability rating? 57% of 3,336 is a lot of sediment to be coming from the banks.

*Bank stability ratings were not provided in the original source. In Table 3 of the Teton River Basin Study, sediment yield from land use is listed as 1,430 tons/year and sediment yield from streambanks was listed as 1,906 tons/year, for a total yield of 3,336 tons/year.*

Page 153. The Forest Service placed a thermograph at the State line in the summer of 2000 and found a maximum instantaneous temperature of 10.6 degrees Celsius. Since this as a warm, dry year, temperatures are likely always well within standards at this location.

*May the Idaho Falls Regional Office of DEQ receive a copy of the data collected?*

Page 159. Considering 89% of the watershed is private, a one-sentence description does not provide much information.

*As for all discussions of specific streams, this description was a summary of information explained in greater detail in previous sections addressing soils, geology, etc.*

Page 163. Map: The upper sample locations on both the North and South Forks are above the fish-bearing segment. These areas are not representative of the Moody Creek forks. This is illustrated by a field reconnaissance by Caribou-Targhee hydrologist Mike Philbin (2000). Philbin found that the South Fork, Fish Creek, and Moody Creek were all highly impacted by fine sediment (report available upon request). Forest Service data also suggest that the North Fork is impacted by fine sediment. This information either comes from stream surveys or observations not point samples.

*May the Idaho Falls Regional Office of DEQ receive a copy of the data collected?*

The information box on the upper North Fork site says South Moody Creek

*Correction made.*

Page 166. See comment for page 163.

*May the Idaho Falls Regional Office of DEQ receive a copy of the data collected?*

Page 168. The Caribou-Targhee National Forest placed a thermograph below the confluence of the North and South Forks in 2000. We found a maximum instantaneous temperature of 23.1 with two exceedences. Since the summer of 2000 was a warm and dry year, these temperatures likely represent the extremes and not normal highs.

*May the Idaho Falls Regional Office of DEQ receive a copy of the data collected?*

Page 168. Fisheries: The Caribou-Targhee National Forest electrofished a large portion of the North and South Forks in 2000.

*I am not aware of electrofishing conducted in 2000, but complete records of fish suitability surveys conducted in 2001 were given to DEQ, and these results have been incorporated into the final document. May the Idaho Falls Regional Office of DEQ receive a copy of the data collected in 2000?*

Page 169. We agree that sediment is a problem in the upper watershed. The Forest Service recommends that TMDLs be developed now for both sediment and nutrients.

*As explained in the final document, it may be possible to use the fish habitat suitability data and photographs collected by the Forest Service in 2001 to develop a sediment load allocation by the end of 2002.*

Page 170. Paragraph 2: Says the basin is in Wyoming rather than Idaho.

*Correction made.*

Page 172. The figure would be better if the Y-axis only went to 100 cfs.

*Comment noted.*

Page 175. Paragraph two: A three percent exceedence for sediments under .85 mm does not seem significant. The 17% exceedence may be a function of the stream type. If the stream is naturally a gravel bed stream this could explain the “higher level” of these particles. The question would be, is the stream impaired or is this what the stream is?

*None of the data were tested for statistical significance. A target was established, and the data were compared to the target. It is not possible at this time, and with the limited data available, to determine whether these sediment concentrations represent impaired conditions.*

We recommend keying in on the finer (clay, silt, and sand) particles and not the fine gravels in these small streams. This is also supported by page 89, which says “The correlations between surface fines...was slightly stronger when using fines less than 1 mm ...most detrimental to the invertebrate community.” Again this supports the use of the smaller particles in this drainage. Given that the targets were not locally developed, we feel that an exceedence of 3% would not represent an impaired stream. In fact, 3% would likely be within the statistical error band.

*The sediment target is not a criterion or standard, nor were any conclusions regarding statistical significance implied. The sediment target represents a target condition, that based on the available scientific literature, should provide conditions suitable for salmonid spawning.*

If bank stability were 99% in the forks, I’d assume that sediment levels are at natural levels. This is because bank erosion is the dominant sediment source in these segments. This factor, along with the percent of the finer particles, provides further support that the stream is not sediment impaired in the Forks.

*Bank stability was determined at the BURP site on a length of stream that was 20 times the wetted width of the stream or 100 m, whichever was longest. It is not possible to extrapolate the condition of banks at one BURP site to the entire stream. Furthermore,*

*the Forest Service identified the South Fork of Packsaddle Creek as a stream that could benefit from the addition of beavers to 1) maintain the dams and ponds that are already there and storing large amounts of sediment, 2) prevent the release of stored sediment, and 3) prevent uncontrolled channel and bank erosion (Blandford 2000). So all available information do not support the conclusion that the stream is not sediment impaired.*

Page 194. The first paragraph says that sediment in North Leigh Creek appears to be originating in Wyoming. However, the data presented on page 188 and 190 shows no problems at the upper site when using DEQ's targets (embeddedness was optimal, fine sediment under 6 mm was only 24%, and fine sediment under 1 mm was only 14%). This would imply that the sediment is coming from between the upper and lower sites. This is also consistent with Wyoming's determination that water quality in North Leigh Creek meets all its standards (including those for sediment).

*This was an error and the sentence regarding the origin of sediment in Wyoming has been deleted.*

Page 201. Resource Problems Identified by the USDA and TSCD: Paragraph two says that reducing sediment yield by approximately 30% would reduce nitrogen by 30%. This is only the case where the sediment reduction is from croplands. Reductions in bank-derived sediment would not produce this nitrogen reduction.

*This is correct. The nitrogen reduction was based only on cropland-generated sediment.*

Page 213. The last sentence under Felt Hydroelectric Project says the results of mitigation are disclosed under the section entitled Teton Creek. No such section exists.

*This section is included in the final document.*

TMDL Overall: It seems like the assessment started with what the agricultural community was willing to do back in 1992 (before the listing was in effect), and then the TMDL was built around this position. If so, the process may not be taking an objective look at the basin. Would there be a different set of practices if the streams were listed prior to the River Basin Study? This also might not be consistent with the usual approach of determining what level of inputs could still support beneficial uses and allocating that. If we base the allocation on what the agricultural community is willing to do, it may result in a disproportionate "hit" on other entities or it may reduce the success in restoring water quality. That is why using the River Basin Study, as the foundation for the TMDL could be a problem. *Since the River basin Study is being used as the starting point and not the "end product" this is more of a concern than an objection.*

*As explained in the section entitled, Summary of Past and Present Pollution Control Efforts, Agricultural Water Quality Projects, the Teton Soil Conservation District was actively pursuing funding for implementation of water quality protection projects in the 1980s. The Teton River Basin Study was part of the process by which the Department of Agriculture provided funds for conservation programs, and the streams that eventually*

*appeared on the 303(d) list were identified as impaired by the agricultural community in order to obtain assistance in addressing conservation issues. Furthermore, the Teton River Basin Study was a cooperative effort of the Soil Conservation Service, Forest Service, Teton Soil Conservation District, and Idaho Department of Fish and Game. The TMDL was built not on what the agricultural community was willing to do in 1992, but on the data that was collected to develop the sediment yields cited in the Teton River Basin Study.*

TMDL: I think the document needs to identify what DEQ's expectations are with regard to the measures. For example:

We expect that the measures identified in the Teton River basin study will be implemented and that these measures would reduce sediment production by xx%. Monitoring would be used to determine whether this reduction is adequate to restore the stream to full support of its beneficial uses.

or

We expect that the measures previously implemented (and identify what they are – if they have already been implemented we should know what they are) between 1992-2000 will begin to result in improved in-stream conditions. These measures reduced sediment inputs by an estimated xx%. Following these reduced inputs, we expect the stream to route previously accumulated sediment resulting in a substrate that is capable of fully supporting beneficial uses. In-stream monitoring will be used to determine whether these reductions are adequate to restore the stream to full support of its beneficial uses.

*The expectations of DEQ for TMDL implementation are specified in the section entitled, Teton Subbasin Total Maximum Daily Loads (TMDLs), Introduction. As explained in this section, specific expectations for implementation will be addressed in the TMDL implementation plan.*

TMDL Page 216. Paragraph one says supports designated beneficial use. This should say existing beneficial uses to be consistent with the state's antidegradation policy.

*The phrase, "existing beneficial uses," has been inserted in the final document.*

TMDL: Paragraph 3 mentions improved farming practices and changes in land use. Were these practices changed before or after listing? If before, it could mean that these practices are not sufficient to meet water quality standards. In other words, that even with these practices water quality is impaired.

*Impaired water quality in the Teton subbasin is the result of almost a century of ever-changing land use practices. As indicated by the Teton River Basin Study, protection of water quality requires a variety of best management practices applied to a variety of land uses.*

TMDL: Page 218 Item 1 says that implementation must commence as soon as possible. However, page 7 says that TMDLs for water bodies listed as a result of this analysis would be delayed until at least 2006. Page 221 also states that TMDLs for Moody Creek and the North Fork Teton River would be deferred until 2003. The Forest Service agrees

that these TMDLs should be implemented “as soon as possible” and that they should be included in this product.

*All TMDLs in the Teton subbasin are currently scheduled for completion by the end of 2002.*

TMDL: Page 219 Item 9 says subject to available resources. The whole premise of adaptive management is that monitoring will trigger certain actions. An adaptive process will fail without a firm commitment by those involved, especially the lead agency (DEQ). If such a commitment cannot be made, a traditional TMDL should be completed for this area.

*Designated management agencies are the lead agencies responsible for implementation of the TMDL; DEQ's role is to facilitate coordination among the agencies. This is explicitly discussed in the section entitled, Teton Subbasin Total Maximum Daily Loads (TMDLs), Introduction.*

TMDL: Page 220. The recommendation section says that Moody and the North Fork are being deferred because the pollutants are not confirmed and data is lacking. However, this is the reason for completing an adaptive management TMDL. Data is lacking for many of the other streams as well. We feel that sufficient information exist to add sediment as a pollutant for Moody Creek and its Forks. The Forest Service completed field reviews (Philbin, 2000) on Moody Creek, the NF, SF, and Fish Creek and found them all severely impacted by sediment (report available upon request). Streams should not be deferred to be consistent with item 1 on page 219 (which says TMDLs should be implemented as soon as possible. Deferring these streams would continue to put them at risk.

*Please refer to the response to the comment for Page 7*

TMDL: Fox Creek: We placed a thermograph at the state line in 2000 and found very low temperatures (instantaneous maximum = 10.6 degrees Celsius). Since this was a very warm and dry year, it's unlikely that temperature is an issue. There may be an opportunity to move this upper boundary.

*May the Idaho Falls Regional Office of DEQ receive a copy of the data collected?*

TMDL: Moody Creek: While the potential to add sediment may be implied by the monitoring of stream bank stability, it should be directly stated. The Forest Service completed field reviews (Philbin, 2000) on Moody Creek, the NF, SF, and Fish Creek and found them all severely impacted by sediment. A report is available upon request.

*May the Idaho Falls Regional Office of DEQ receive a copy of the data collected?*

TMDL: Page 222. Load Allocations: It appears that the primary driver for the TMDL is the Teton River Basin Study. Since this study preceded the 303(d) listings, it may be

more heavily weighed towards the political/social side then the resource side. If the study was completed following the listings, the balance between social and resource needs might have been different. This section also states that the attainability of these levels was based upon an analysis preformed in 1992.

Have new techniques been developed in the past 9 years that would increase the level of attainability?

Were any new techniques considered?

It sounds as if these practices would still result in sediment production above “tolerable levels.” If this is the case, the measures may not be stringent enough to restore water quality.

Have these practices been in use since 1992? If so, it would mean that even with these measures in place, the streams do not meet standards. That could imply that the measures are not sufficient. It could also mean that improvements are imminent and that they are simply lagging behind the practices. What does DEQ think is happening?

*As explained in the section entitled, Summary of Past and Present Pollution Control Efforts, Agricultural Water Quality Projects, the Teton Soil Conservation District was actively pursuing funding for implementation of water quality protection projects in the 1980s. The Teton River Basin Study was part of the process by which the Department of Agriculture provided funds for conservation programs, and the streams that eventually appeared on the 303(d) list were identified as impaired by the agricultural community in order to obtain assistance in addressing conservation issues. Furthermore, the Teton River Basin Study was a cooperative effort of the Soil Conservation Service, Forest Service, Teton Soil Conservation District, and Idaho Department of Fish and Game. The TMDL was built not on what the agricultural community was willing to do in 1992, but on the data that was collected to develop the sediment yields cited in the Teton River Basin Study. This data was the only data on which load allocations could be based. The remaining questions can best be answered through TMDL implementation and monitoring.*

TMDL: Page 224. Sediment Targets:

What does this mean with regard to land management?

*That management must be directed toward restoring beneficial uses achieving these targets.*

The Forest Service recommends mandating an “improving trend” policy. This could involve a “no net increase concept.” For example, if an activity increased sediment production in one part of a watershed it should reduce it somewhere else (road obliterations, fencing, etc...).

*As a designated management agency, the Forest Service may implement whatever policies it considers appropriate to achieve the goals of the TMDL as long as it they are consistent with the coordinated Implementation Plan.*

We're concerned that an environmental group could sue us for any bank impacts in drainages with bank stability less than 80%. Even one hoof print. This could close down grazing. We assume the intent is producing improving trends. For example, if the existing bank stability level were 70% and our proposal would reduce overall bank impacts through fencing or other techniques than we'd be ok. Is this correct? This would allow new bank impacts, so long as the net result is an improvement. This would be consistent with the "no net increase" or "improving trend" concepts as this is a reduction in impacts (annual bank impacts / sediment).

*As a designated management agency, the Forest Service may implement whatever policies it considers appropriate to achieve the goals of the TMDL as long as it they are consistent with the coordinated Implementation Plan.*

The previous bullet also raises the issue of scale. Can there be local impacts so long as there are improvements at the watershed scale? Does the 80% bank stability target apply at the reach scale, the stream scale, the sub-watershed scale, or the watershed scale?

*The 80% stability rating is specified the measured reach and surrounding extrapolated banks.*

Does the "TMDL" target prioritize the most unstable reaches?

*Yes, if bank stability is less than 80%.*

The above comments and concept of "no net increase" would also apply to the "percent fine sediment" target.

As a result of these comments, the Forest Service recommends that the concept of "improving trends" be specifically addressed in the final TMDL.

These targets should be stream type specific. Lower gradient "C" channels would be much different than high gradient "A" channels. In addition, a gravel bed stream (Rosgen B4) would naturally have a higher percentage of fine gravels (2-6.25 mm) than a boulder streams (Rosgen B2). Therefore, the same sediment target should not apply to both stream types. Until better information become available, we recommend using <1 or 2 mm (sand and finer) for gravel bed streams and <6.35 mm for cobble/boulder streams. I commented extensively on this topic in the subbasin assessment section and I refer back to those comments for the TMDL section.

*As a designated management agency, the Forest Service may implement whatever policies it considers appropriate to achieve the goals of the TMDL as long as it they are consistent with Implementation Plan.*

Why are we using subsurface sediment when this is more difficult (and expensive) to collect than surface sediment? Pages 89-99 present information about the use of surface sediment as a measure of stream health. This sounds as if it would be useful and cost effective.

*Because subsurface sediment is more strongly indicative of the quality of spawning gravels than surface sediment, and a relationship between surface sediment and subsurface sediment does not exist.*

This section appears to be evaluating different things. Subsurface sediment is dealing with bed materials while turbidity is dealing with suspended. If the issue that sediment in the bed is affecting fish production, we should stick to bed sampling. This could mean evaluating fine sediment levels in bed features that are not inundated (or barely covered) during low flows. The monitoring should be designed for the specific issue: bedload or turbidity.

*Sediment may impair water quality in both the water column and stream substrate. As explained in the section of the subbasin assessment entitled, Sediment, the effects of both must be addressed to restore and maintain beneficial uses.*

Page 224      Margin of Safety: The TMDL doesn't have a margin of safety – the targets do.

Page 225      Seasonal Variation: The seasonal variation is on the loading but the margin of safety is not.

*A TMDL is the sum of the individual wasteload allocations for point sources of a pollutant, load allocations for nonpoint sources and natural background levels, and a margin of safety.*

Page 257 (G) Using sieve size 2.36 would better approximate fine sediment (Sands go up to 2 mm). The .85 mm size used in this document excludes sands from the evaluation. While 6.3 mm would include sands, it also includes small gravels, which may not be a problem in gravel bed streams.

*Nine standard Tyler sieves were used, including one with a mesh size of 2.36 mm.*

### **Comments received from the United States Bureau of Reclamation:**

Page 8: Mark Croghan is with the Bureau of Reclamation.

*Mr. Croghan's affiliation has been corrected in the final document.*

Pages 73 and 224: The water quality targets have been brought up several times in the Water Quality Subcommittee meetings. Realizing that these targets have been chosen due to lack of data, and do not coincide with the load allocations, the targets or load

allocations may or may not be appropriate for this watershed. As more water quality data is collected, it is important that these targets and load allocations be evaluated and readily changed if necessary as a part of this adaptive management TMDL.

*Comment noted. The goal of the TMDL process is to restore beneficial use support through successively more refined pollutant source inventories, load reductions and project implementation.*

Page 106: It is agreed that agricultural practices contribute nitrogen to the watershed. However, it is likely that there are other sources of nitrogen besides agriculture.

*The language used in the discussion of page 106 was not intended to imply that agriculture is the only source of nitrogen in the Bitch Creek watershed, however, this study was specifically intended to assess contributions of agricultural practices.*

Page 214: The last line, “is currently completing a study of vegetation within the Canyon” should be deleted. The studies conducted are described in the previous sentences.

*This correction has been made in the final document.*

Page 214: “Funding has been requested for the 2002 fiscal year to begin the development of a ten-year Resource Management Plan (RMP) for the Teton Canyon.”

*This correction has been made in the final document.*

Page 214: “Development of the RMP will form the basis for future management of public lands administered by the Bureau on the Teton River.” It is hoped that the RMP will have a positive impact on the water quality in the canyon; however, how “significantly” it will influence the water quality is unknown.

*This correction has been made in the final document.*

Page 226: “The objective of the load allocation is to reduce the concentration of nitrate nitrogen by 29%.” This would give a target concentration of \_\_\_?

*This entire sentence was deleted.*

### **Comments received from the United States Environmental Protection Agency, Region 10, Idaho Operations Office**

The Teton Subbasin Assessment and TMDL is very thorough and well illustrated with maps and tables. The descriptions of the 303(d) listed waters are very complete and the document is well organized and easy to follow.

My comments are organized to first address TMDL approval issues, then other substantive issues, followed by 303(d) listing comments and editorial comments. I hope these are helpful in your revision process.

#### Sediment TMDL

##### Loading Capacity, Page 222

The current discussion of the loading capacity states only that the loading capacity is unknown and is assumed to be between background levels and current levels. The loading capacity must be tied to water quality standards for the TMDL to be approvable. Although sometimes it is necessary to make conservative assumptions in order to establish the load capacity, a TMDL is incomplete and cannot be approved without a quantitative load capacity.

The description of the targets for sediment that are considered to be protective of beneficial uses on page 73 provide a good starting point for determining the loading capacity. EPA agrees that without numeric criteria, you should chose targets and we agree that your targets are appropriate. The loading capacity is the greatest amount of loading that a water can receive without violating water quality standards. Since the sediment criterion is narrative, you chose some numeric targets for sediment, so your loading capacity is the amount of loading a water can receive and still achieve the targets you have chosen. Though, the loading capacity may not be known with certainty, a margin of safety is included to compensate for any lack of knowledge concerning the relationship between loads and water quality.

*The approaches used in this TMDL were adapted from other TMDLs submitted by Idaho DEQ and approved by the Region 10 Office of the USEPA. The TMDL text has been modified for clarity and tailored to the Teton subbasin.*

##### Load Allocations, Page 222

The load allocations must be tied to water quality standards through the loading capacity for a TMDL to be approvable. You state that your load allocations are based on levels considered attainable through the application of non-structural agricultural practices. Though we agree that non-structural agricultural practices may be a good place to start in an adaptive management TMDL, we cannot approve a TMDL on this starting point unless it contains a load capacity, and allocations which are expected to achieve the end point of meeting water quality standards. Hopefully the water quality standards based load allocations you develop will be achievable through non-structural agricultural practices, but if they are not, other methods of pollution control will be needed.

*Please refer to the response to the comment regarding Loading Capacity.*

##### Margin of Safety, Page 223

Though the targets may incorporate an implicit margin of safety, it is difficult to determine what this is from the current discussion. The conservative assumptions should be better described. The fact that the targets were based on the best available scientific information does not explain the implicit margin of safety. Also, the margin of safety

applies to the targets, which are not currently tied to the loading capacity. The targets must be incorporated into the loading capacity for this margin of safety to be approvable.

*Please refer to the response to the comment regarding Loading Capacity.*

#### Seasonal Variation and Critical Conditions, Page 225

The way the seasonal variation and critical conditions are considered should be better described. Critical conditions are important because they describe the combination of environmental factors (flow, temperature etc.) which are most likely to cause a violation of water quality standards. The critical conditions should be analyzed in terms of the specific targets chosen, not just assumed to be included in the model.

*Please refer to the response to the comment regarding Loading Capacity.*

#### Nitrogen TMDL

##### Loading Capacity, Page 225

The loading capacity must be linked to the narrative nutrient criterion interpreted with numeric targets for the TMDL to be approvable. Please see discussion on sediment TMDL loading capacity.

*Please refer to the response to the comment regarding Loading Capacity.*

##### Load Allocations, Page 225

The load allocations must be tied to meeting the water quality standards through the loading capacity for the TMDL to be approvable. Nitrogen load allocations based on the sediment load allocations which are based on attainable levels of sediment reduction are not approvable, unless it is explained how they will result in achieving the load capacity for nitrogen. Though the target of a 29% reduction in the concentration of nitrate nitrogen may be fine, how this reduction is tied to the numeric nutrient target must be described, and how the target is linked to the loading capacity, must be described.

*Please refer to the response to the comment regarding Loading Capacity.*

##### Margin of Safety, Page 226

The reason the target of a 29% reduction in the concentration of nitrate nitrogen is considered to be less than the concentration that will cause a violation of the narrative nutrient criterion should be described.

*Please refer to the response to the comment regarding Loading Capacity.*

#### Other Substantive Comments

##### Boundary changes

Boundary changes are discussed in the Analysis of Water Quality data... section and summarized in Table 37. IDEQ has proposed a number of water segment boundary changes based on the flow of the stream. EPA does not object to the boundary changes themselves. However, it appears that IDEQ is proposing that only the perennially

flowing waters be included on the 303(d) list and that the segments of intermittently flowing waters would not be listed. For example, for North Leigh Creek you propose to change the lower boundary of the 303(d) listed segment from Spring Creek to the lower extent of the perennial flow. This change would mean that the segment from the lower extent of the perennial flow to Spring Creek would no longer be included on the 303(d) list. Similar boundary changes are proposed for a number of waters in the basin. Idaho water quality standards apply to intermittent as well as perennial streams, therefore, water body segments cannot be taken off the 303(d) list simply because they are intermittent. If IDEQ wants to change the segments based on flow, both the perennial and intermittently flowing segments should be included on the 303(d) list.

We recognize that it is difficult to gather data and to do a TMDL for a water body segment when the water does not flow continuously in the segment. However, these water bodies can have significant water quality problems, and be a significant source of pollution to downstream water bodies as well. In order to ensure that TMDL implementation captures such problems, we encourage you to consider writing watershed TMDLs that encompass both the perennial and intermittently flowing water, using data gathered where the water flows throughout the year.

*Numeric criteria for cold water aquatic life (e.g., temperature and dissolved oxygen) apply to intermittent channels when discharge is greater than 1 cfs (WQS § 003.51, § 070.07). So intermittent streams that flow only during periods of runoff, and provide migration corridors for aquatic life, are protected by numeric criteria. Narrative criteria, such as the criteria for sediment and nutrients, state that a pollutant shall not exceed quantities which impair beneficial uses. Idaho DEQ uses biological indices to assess support of the beneficial uses of cold water aquatic life and salmonid spawning. According to DEQ's Standards Coordinator, these biological indices were developed based on the composition of aquatic insect or fish communities sampled in perennial reference streams. Similar species diversity and other community measures cannot be expected to occur in channels that are periodically dry. Therefore, the biological indices used to assess beneficial use status can only be used on perennial portions of streams. This interpretation has precedence in Idaho's 1998 303(d) List, response to Public Comments 20 and 75 for Tygee Creek and 80 for Tag Alder Creek.*

*To address other issues raised by this comment, language has been added to the discussions for each listed water body. For example, in the discussion of Darby Creek, the following statements have been added:*

- 1. Discharge in the segment of Darby Creek from the Idaho-Wyoming state line to the spring west of Highway 33 is intermittent. The biological indices used by DEQ to assess the beneficial uses of cold water aquatic life and salmonid spawning were developed using data collected for aquatic insect or fish communities sampled in perennially flowing reference streams. Similar species diversity and other community measures cannot be expected to occur in channels that periodically become dry. Therefore, it is not appropriate for DEQ to use data*

*collected using the BURP protocol to assess beneficial use support in Darby Creek upstream of the spring west of Highway 33.*

- 2. For the purpose of assessing beneficial use support using data collected according to the BURP protocol, DEQ should sample only in the following segment of Darby Creek: from the spring west of Highway 33 to the confluence of Darby Creek with the Teton River.*
- 3. Water quality in the segment of Darby Creek between the diversion near the Idaho-Wyoming state line and the spring west of Highway 33 is protected by numeric criteria when the channel contains water, and turbidity during runoff should be monitored to determine whether this criterion, as an indicator of sediment, is exceeded.*
- 4. The water quality targets for sediment and nutrients shown in Table 19 should not be exceeded at any location in Darby Creek when the channel contains flowing water.*

#### Page 137 Badger Creek

First statement in the discussion section is "Because of the natural flow regime of Badger Creek, it is unlikely that the beneficial uses of cold water biota and salmonid spawning can be supported ...". However, there is no follow up discussion. If IDEQ believes that beneficial uses cannot be met in this stream, redesignating the uses in the water quality standards would be an action to consider. If a TMDL will not be written at this time, a TMDL schedule change should be developed.

*Please see the response to the previous comment.*

#### Page 184 North Leigh Creek/Spring Creek

For North Leigh Creek the only information in the discussion section is a statement that sediment appears to be originating in Wyoming. There is no discussion of what action should be taken. If sediment is a concern, IDEQ should discuss the stream with the Wyoming environmental agency staff. EPA will be happy to facilitate this discussion if necessary.

*This statement was an error and has been removed.*

The summary on Table 37 suggests that the TMDL for North Leigh Creek be deferred, though I did not find the reason for this in the text or the table. If the TMDL is to be deferred, a TMDL schedule change should be developed.

*North Leigh Creek is intermittent and heavily diverted for irrigation purposes, so it should not have been assessed using BURP data. However, if North Leigh Creek is a source of sediment, it will be addressed by the TMDL for Spring Creek because North Leigh Creek is a tributary of Spring Creek.*

### 303(d) Listing Comments

#### Table 24

The waters in this table that are not on the 303(d) list and are designated as Not Full Support or Needs Verification should be considered for addition to the 303(d) list. These waters are identified below.

#### Page 92

Dry Creek is designated as Not Full Support and should be considered for listing.

*Dry Creek is an intermittent stream and should not have been assessed using BURP data.*

#### Page 93

Waters on the 303(d) list are supposed to be shown in bold type in Table 24. Horseshoe Creek is on the 303(d) list, but is not in bold type on this page. It is not possible to tell which segment shown on the 303(d) list corresponds to which Sample Site ID Number on Table 24 so it is not clear which of the lines, if any, should be bolded. If none of the Sample Site ID Numbers correspond to sites on the 303(d) listed water, the segments represented in Table 24 should be considered for 303(d) listing.

*These corrections have been made in the final document.*

#### Page 94

Moody Creek and North Leigh Creek are shown on the 303(d) list, but are not in bold type on this page. As with Horseshoe Creek, it is not possible to tell which segment shown on the 303(d) list corresponds to which Sample Site ID Number on Table 24 so it is not clear which of the lines should be bolded. If none of the Sample Site ID Numbers correspond to sites on the 303(d) listed water, the segments represented in Table 24 should be considered for 303(d) listing.

*These corrections have been made in the final document.*

#### Page 96

Sweet Hollow Creek is designated as Needs Verification and should be considered for addition to the 303(d) list, or additional monitoring to confirm whether it meets water quality standards.

#### Page 107

The text states that concentrations of nitrogen collected at the mouth of Bitch Creek exceed the nutrient guidelines so it appears Bitch Creek should be considered for listing for nutrients.

*Exceedances of nutrient guidelines do not necessarily indicate that water quality standards have been violated or that beneficial uses have been impaired. There is no evidence that the narrative criterion for excess nutrients has been exceeded in Bitch Creek, beneficial uses are supported, and there have been no violations of numeric water quality criteria.*

Page 123

It appears from the text and from Table 33 that the Teton River should be considered for listing for temperature.

*Language to this effect has been added to the subbasin assessment and TMDL portions of the final document.*

Page 158 Fox Creek

It appears from Figure 40 that Fox Creek does not meet the temperature standard for salmonid spawning from June -August and the creek should be considered for listing of temperature if spawning occurs during this time.

*Salmonid spawning does not occur at this time. The discussion of temperature criteria exceedances in Fox Creek has been expanded in the final document.*

Page 184 North Leigh Creek/Spring Creek

For Spring Creek, it appears that fecal coliform has exceeded the criterion and the water should be considered for listing of bacteria on the 303(d) list. Also, the temperature of the creek regularly exceeds the water quality criterion. Although the text states that temperature may be naturally high, the creek should be considered for listing for temperature unless a natural condition site specific criteria is established first.

*The criterion for recreational use has been changed from fecal coliform to E. coli since that analysis was made. Furthermore, a single violation of the criteria for bacteria generally initiates accelerated sampling to determine whether the violation is chronic. Additional sampling for bacteria in 2000 failed to indicate that criteria were being violated.*

#### Editorial Comments

##### General

The subbasin assessment needs an executive summary. It is difficult to get the big picture of what is going on in the basin, which streams are impaired, and what solutions are being recommended without an executive summary. It would also be very helpful to have a table that incorporated all of the parameters considered for each water, and summarized the recommendations or decisions for each water at the beginning of the document. A comprehensive map showing the tributaries of the Teton River and the location of the failed dam would also improve the reader's understanding of the big picture of the subbasin.

*An executive summary has been added and the section on topography has been moved to the front of the assessment to give the reader a more comprehensive introduction to the subbasin.*

Flow is clearly a significant issue in the Teton Subbasin. Many of the waters described are completely dewatered at some point along their length during the irrigation season. Flow may be as significant or even more significant to the aquatic life in the waters than

the pollutants for which TMDLs are being completed. Though we recognize that it is likely to be outside the CWA context, and that changing water use patterns can be difficult, we encourage you to pursue all opportunities to retain more water in the streams.

*Comment noted.*

Page x

Why are Figures 19-25 not included in this list? The List of Figures would also be more helpful if page numbers were included.

*These figures are included in the final document.*

Page 86

Should the units for total phosphorous in the first paragraph be ug/L rather than g/L?

*This correction has been made in the final document.*

Table 24

Page 96

Teton River South Fork is shown in bold type, but it is not on the 1998 303(d) list so it should not be bolded.

*This correction has been made in the final document.*

The Teton River and the North Fork of the Teton River are discussed in the text and it is stated that they are not sampled because of deep water. Since you show this same comment for the South Fork of the Teton River on Table 24, it would be consistent to show that an effort was made to sample the North Fork and the mainstem Teton River, but they were not sampled because of deep water. The Teton River and North Fork Teton River are not currently shown on Table 24.

*This correction has been made in the final document.*

Page 105

Figure 20 is referenced on this page, but does not appear to be included in the document and is not in the List of Figures.

*This correction has been made in the final document.*

Page 107

Figure 22 and 23 are referenced on this page, but they do not appear to be included in the document and are not included in the List of Figures.

*This correction has been made in the final document.*

Page 117

Figure 24 is referenced at the bottom of this page but does not appear to be in the document and is not included in the list of figures.

*This correction has been made in the final document.*

Page 159 Moody Creek

Table 37 on page 221 discusses what will be done with the waters and parameters on the 1998 303(d) list. However, some waters, such as Moody Creek, will have TMDLs developed for parameters not on the 303(d) list. Moody Creek was listed for nutrients and Table 37 notes that the nutrient TMDL will be deferred, but Moody Creek was also found to be impaired due to sediment and a sediment TMDL is to be done. Table 37 does not discuss the parameter of sediment for Moody Creek. It would be very helpful to have a table that incorporated all of the parameters considered for each water and summarized the recommendations or decisions for each. Such a summary table would be useful to the reader either at the beginning of the document with an executive summary or at the beginning of the Analysis of Water Quality Data ... section.

*This correction has been made in the final document.*

Page 184, North Leigh Creek/Spring Creek

I think the information would be much clearer if North Leigh Creek and Spring Creek were summarized separately.

*It is difficult to discuss them separately because North Leigh Creek is a tributary of Spring Creek and significantly alters its flow regime during runoff. The discussion of this and other sections have been extensively modified in an effort to make the document more comprehensible to the reader.*

Page 195 Teton River, Teton Valley Segment

The description in the text, does not match the boundary description on the 303(d) list, so it is difficult to determine which, or how many of the 303(d) listed segments are discussed in this section.

*An effort has been made to clarify these problems in the final document.*

Page 210, first full paragraph

The last sentence states that “more than \$1.5 million was obligated to project AG-32 for a 10 year period...” ending April 2001. I couldn’t find a description of the project or the results of the project. This section is titled “Summary of Past and Present Pollution Control Efforts” so a summary of the project and the results would be appropriate.

*A statement has been added to indicate that this money is for cost-shared projects with landowners. These projects vary according to the needs of the landowner.*

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**Henry's Fork Watershed Council**

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May 4, 2001

Jim Johnston, Regional Administrator  
Department of Environmental Quality  
900 N. Skyline, Suite B  
Idaho Falls, ID 83402

Dear Jim:

On behalf of the Henry's Fork Watershed Council, which serves as the official Watershed Advisory Group for the Henry's Fork basin, we would like to submit our comments and recommendations on the Department of Environmental Quality's Teton Subbasin Assessment and Total Maximum Daily Load (TMDL).

The Watershed Council's Water Quality Subcommittee met several times to review the development of the subbasin assessment and TMDL for the Teton. The subcommittee recognizes that water quality data is limited for the Teton watershed, which makes it difficult to develop a TMDL. The committee recommends further monitoring and research to support the document and provide more information where data gaps exist. The Teton TMDL sets pollutant targets based on the best available data at this time using the "adaptive management" approach. The Watershed Council supports this approach and makes the following recommendations to the Department of Environmental Quality (DEQ):

1. DEQ needs to remain flexible in selecting water quality indicators in the Teton Watershed. As the monitoring and implementation phases progress, better techniques to describe and quantify water quality may be recognized. If so, they should be utilized by DEQ.
2. A section addressing issues in the Teton Creek needs to be added to the Assessment.
3. Monitoring in the Moody Creek Watershed needs to proceed as quickly as possible.
4. The Watershed Council desires to stay engaged in future water quality monitoring, research, and land treatment projects within the Teton Subbasin. It is recommended that those agencies, organizations, and individuals proposing these activities utilize the Watershed Council to gain peer input and review.
5. There is a need for comprehensive basin-wide long-term monitoring and the Watershed Council offers its assistance with these efforts.

On behalf of the Henry's Fork Watershed we want to acknowledge the hard work of the DEQ

## Cofacilitators:

Henry's Fork Foundation Jan Brown, 208-652-3567 Fax 208-652-3568  
Fremont-Madison Irrigation District Dale Swenson, 208-624-3381 Fax 208-624-3990

JH

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staff in putting together the subbasin assessment and TMDL. Sheryl Hill was particularly helpful to the Water Quality Subcommittee as it reviewed the assessment. Thank you for considering our comments.

Sincerely,

Dale L. Swensen, Co-facilitator  
Fremont-Madison Irrigation District

Charlie Sperry, Co-facilitator  
Henry's Fork Foundation